SOLAR, Jaroslav, dr.; SALOVA, Valeria, dr.

Property relation in the new Economic Code. Prace mzda 12 no.11:518-520 N '64.

SALOZHIN, B.V., elektromonter

Photoswitch for the loading controling of carding machines. Tekst. prom. 20 no.4:72-73 Ap '60. (MIRA 13:8)

1. Fabrika "Krasnoye vereteno".
(Automatic control) (Carding machines)

ACCESSION NR: AT3013101 S/2757/62/000/002/0091/0116

AUTHORS: Ky*kov, Ya. V.; Salpagarov, Kh. M.

TITLE: Contribution to the theory of integro-differential equations

SOURCE: AN KirgSSR. Institut fiziki, matematiki i mekhaniki. Issledovaniya po integro-differentsial'ny*m uravneniyam v Kirgizii, no. 2, 1962, 91-116

TOPIC TAGS: integrodifferential equation, Volterra equation, Grunwall Bellman inequality, periodic solution, uniqueness, stability, boundary value problem, hyperbolic integrodifferential equation

ABSTRACT: The Volterra integro-differential equation is investigated by using the generalized Grunwall-Bellman inequality. The study covers the existence of the periodic solution of the limiting mode, continuous dependence and uniqueness of the solutions and other problems. The $Y(t_0)$ stability of the solutions is examined

Card 1/2

ACCESSION NR: AT3013101

and certain theorems derived concerning them. Bounds are estimated for the solutions. Uniqueness, boundedness, stability, and estimates are also derived for the solutions of the first boundary-value problem with integro-differential equations of the hyperbolic type. Orig. art. has: 23 formulas.

ASSOCIATION: Institut fiziki, matematiki i mekhaniki AN KirgSSR (Institute of Physics, Mathematics, and Mechanics, AN KirgSSR)

SUBMITTED: 00	DATE ACQ: 30Sep63	ENCL: 00
SUB CODE: MM	NO REF SOV: 009	OTHER: 008

Card 2/2

ACCESSION NR: AR4039300 S/0044/64/000/003/B082/B082

SOURCE: Ref. zh. Matematika, Bas. 3B386

AUTHOR: Salpagarov, Kh. M.

TITLE: The stability of solutions to systems of integro-differential equations

CITED SOURCE: Sb. Materialy* 7-y Nauchn. konferentsii Kafedry* vy*ssh. matem. Frunzensk. politekhn. in-t, Fruńze, 1963, 47-51

TOPIC TAGS: solution stability, integro-differential equation, integro-differential equation proximity

TRANSLATION: Let

$$\frac{\partial u(x,t)}{\partial t} = F[x,t,u(x,t)] + \int_0^1 K[x,t,s,u(s,t)]\,ds + \int_a^t \left(H[x,t,\tau,u(x,\tau)] + \int_0^1 M[x,t,s,\tau,u(s,\tau)]\,ds\right) d\tau \quad (1)$$

Card 1/3

be an initial system of integro-differential equations (s. i.-d. e.), and let

$$\frac{\partial v(x,t)}{\partial t} = f[x,t,v(x,t)] + \int_0^t k[x,t,s,v(s,t)]\,ds + \int_0^t \left(h[x,t,\tau,u(x,\tau)] + \int_0^1 M_0[x,t,s,\tau,u(s,\tau)]\,ds\right)d\tau$$

be a s. i.-d. e. which in a certain sense is close to (1). In § 1 a series of theorems is formulated which permit us to judge the proximity of (1) and (2) in a domain G if $\|u(x, t_0) - v(x, t_0)\| < \delta$. In § 2 the author considers a s. i.-d. e. of the form

$$\frac{\partial^2 u(x,t)}{\partial x \partial t} = F[x,t,u(x,t)] + \int_a^x R[x,t,s,u(s,t)]\,ds + \int_b^t H[x,t,\tau,u(x,\tau)]\,d\tau + \int_a^x \int_b^t Q[x,t,s,\tau,u(s,\tau)]\,d\tau\,ds.$$

ACCESSION NR: AR4039300

from this point of view. L. Krivoshein.

DATE ACQ: 22Apr64 SUB CODE: MA ENCL: 00

Card 3/3

Salplachta, Jaromir

Treatment of dairy sewage by means of *Oospora lactis*. Miloslav Svoboda and Jaromír Šalplachta (Výzk.ústav mléko vejce, Brno, Czech.). *Československ. mikrobiol.* 1, 176–82(1956).—Degradation of larger amts. of lactose is not caused by *O. lactis* but must be ascribed to other microorganisms present in sewage waters which produce lactic acid. This is then decompd. by *O. lactis* which also participates in the pptn. of suspended org. material through its mycelia during the treatment with lime. Possible mechanisms of the treatment including fermentation of proteins are discussed. L. J. Urbánek

SALPLACHTA J.

CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Application - Food industry J-14

Abs Jour : Referat Zhur - Khimiya, No 2, 1958, 6268

Author : Svoboda Miloslav, Salplachta Jaromir

Inst : Not given

Title : Influence of Equipment of a Milk Receiving Center on Microbiological Contamination of Milk

Orig Pub : Prumyal potravin, 1957, 8, No 7, 382-385

Abstract : Proper organization of washing and disinfection of the equipment of a milk receiving center is considered; the microbiological content of milk is shown on proper and on incorrectly conducted disinfection.

Card 1/1

SVOBODA, Miloslav, inz.; SALPLACHTA, Jaromir; HLAVKA, C. Miroslav, inz.; STELCOVA, Darja

Experience with the single-stage ferementing purification of dairy waste water. Prum potravin 14 no.4:193-197 Ap '63.

1. Vyzkumny ustav mlekarensky, Praha, pracoviste Brno.

SVOBODA, M., inz.; GILLAR, J., promovany biolog; SALPLACHTA, J.; HLAVKA, C. M., inz.; STELCLOVÁ, D.; MARVAN, P., RNDr.

Last stage purification of dairy waste waters by biologic filters. Vodni hosp 14 no.6:219-222 '64.

1. Institute of Dairy Research Brno (for all except Marvan).
2. Research Institute of Water Resources Management, Brno (for Marvan).

SHURKIN, Kirill Aleksandrovich, kand.geol.-mineral.nauk; GORLOV, Nikolay Vasil'yevich; SAL'S, Marina Yevgen'yevna; DUK, Vladimir Leont'yevich; NIKITIN, Yuriy Vladimirovich; POLKANOV, A.A., akademik, glavnyy red.; ARON, G.M., red.izd-va; KRUGLIKOVA, N.A., tekhn.red.

[Belomorsk complex of northern Karelia and the southwestern part of the Kola Peninsula; geology and pegmatite potential] Belomorskii kompleks Severnoi Karelii i iugo-zapada Kol'skogo poluostrova; geologiia i pegmatitonosnost'. Moskva, Izd-vo Akad. nauk SSSR, 1962. 305 p. (Akademiia nauk SSSR. Laboratoriia geologii dokembriia. Trudy, no.14). (MIRA 16:2)
(Karella--Pegmatities)
(Kola Peninsula--Pegmatites)

SAL'SKAYA, L.G.

18(6) PHASE I BOOK EXPLOITATION SOV/3199

Akademiya nauk SSSR. Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova

Analiz blagorodnykh metallov (Analysis of Noble Metals) Moscow, 1959. 193 p. Errata slip inserted. 2,700 copies printed.

Resp. Ed.: N. K. Pshenitsyn, USSR Academy of Sciences, Corresponding Member; and O. Ye. Zvyagintsev, Doctor of Chemical Sciences; Eds. of Publishing Houses: T. G. Levi, and D. N. Trifonov; Tech. Ed.: I. N. Guseva.

PURPOSE: This collection of articles is for scientists engaged in the study and analysis of the noble metals.

COVERAGE: This is a collection of articles on the analysis of the noble metals. It includes studies carried out by the Institute of General and Inorganic Chemistry im. N. S. Kurnakov (AN SSSR), as well as reports presented by scientific research organizations and by industrial enterprises at the Third and Fourth Conference on Noble Metals held in 1954 and 1957, respectively. The studies and reports describe new organic reagents for gravimetric determination of platinum metals, and physicochemical methods of analysis (spectrophotometric, polarographic and potentiometric). Special attention is given to spectral analysis for the determination of admixtures in alloys of platinum metals, silver, and gold, as well as in refined noble metals. The collection also includes analytical methods, tables and charts for materials containing metals of the platinum group, as well as a review of the literature on the analysis of platinum metals published in the last five years. No personalities are mentioned. References follow each chapter.

16

SOV/78-4-2-10/40

5(4)

AUTHORS: Pshenitsyn, N. K., Ginzburg, S. I., Sal'skaya, L. G.

TITLE: Investigation of the Oxidation Reaction of Iridium (III) in Solutions of Sulfuric, Phosphoric, and Perchloric Acid (Izucheniye reaktsii okisleniya iridiya (III) v rastvorakh sernoy, fosfornoy i khlornoy kislot)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2, pp 301-313 (USSR)

ABSTRACT: The oxidation of iridium (III) with cerium (IV) sulfate, sodium bismuthate, perchloric acid, and potassium bichromate in concentrated solutions of sulfuric acid, diluted sulfuric acid, and concentrated phosphoric acid was investigated. The following compounds were used as initial reagents: standard solutions $H_2[IrCl_6]$ of various concentrations; standard solutions $Ce(SO_4)_2$ (0.1-0.04 N), $K_2Cr_2O_7$ (0.1-0.04 N); $NaBiO_3$, chemically pure; $HClO_5$, 50%; H_3PO_4, 60%; H_2SO_4 (specific gravity 1.84). The investigation of the oxidation reaction was carried out by means of the absorption spectra and the

Card 1/ 4

Investigation of the Oxidation Reaction of Iridium (III) in Solutions of Sulfuric, Phosphoric, and Perchloric Acid

potentiometric titration of the solutions by Mohr's salt. It was found that the oxidation reaction of iridium (III) mainly depends on the concentrations of sulfuric acid and phosphoric acid, respectively. In concentrated solutions of these acids blue solutions are formed, independent of the oxidizer, with characteristic absorption spectra with an absorption maximum at 570 mμ. These solutions contain iridium (IV) in the form of a complex anion with the addenda SO_4^{2-} or PO_4^{3-}. The same characteristics of phosphoric acid and sulfuric acid show that these complex compounds contain the same chromophoric group. On the oxidation of iridium (III) red solutions are formed in weak solutions of sulfuric and phosphoric acid and in perchloric acid, which have characteristic spectra with an absorption maximum at 500 mμ. The separation of the products formed did not prove successful. It may be presumed that these compounds contain iridium (IV) as a hydrated cation. The hydrated complex is stable in acid media only and with an increase of pH in the solution it becomes a hydroxo compound which is separated as iridium hydroxide.

Investigation of the Oxidation Reaction of Iridium (III) in Solutions of Sulfuric, Phosphoric, and Perchloric Acid

It was found by the potentiometric titration of the red and the blue iridium complex solutions that iridium is tetravalent in these solutions. In oxidation processes of iridium (III) a catalytic decomposition of the excess oxidizer takes place. The decomposition is probably caused by the formation of intermediate products of iridium (IV) with the oxidizer. The synthesis of the compounds of Ir(IV) with sulfuric and phosphoric acid was carried out with alkaline earths and alkali salts. The following salts were produced: $Ba_2H[Ir(PO_4)_3H_2O]$ or $Ba_2[Ir(PO_4)_2(HPO_4)H_2O]$, $K_2[Ir(SO_4)_2(OH)_2]K_2SO_4$, $Ba[Ir(SO_4)_2(OH)_2]BaSO_4$, $K_2[Ir(H_2O)(OH)(SO_4)_2].H_2O$, $Ba[Ir(H_2O)(OH)(SO_4)_2]$. The composition of the last four compounds is not certain because they may contain Ir(III). An analytic method of determining iridium in H_2SO_4 and H_3PO_4 solutions has been worked out by means of perchloric acid as oxidizer. The method is based on the potentiometric titration of the blue complex of iridium (IV)

Investigation of the Oxidation Reaction of Iridium (III) in Solutions of Sulfuric, Phosphoric, and Perchloric Acid

which is formed in a mixture with sulfuric or phosphoric acid. It is possible to determine amounts of iridium from 0.1-5 mg by potentiometric titration. There are 13 figures, 2 tables, and 7 references, 1 of which is Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. S. N. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry imeni S. N. Kurnakov of the Academy of Sciences USSR)

SUBMITTED: November 29, 1957

5.2620

69016

S/078/60/005/04/011/040
B004/B007

AUTHORS: Pshenitsyn, N. K., Ginzburg, S. I., Sal'skaya, L. G.

TITLE: Complex Compounds of Iridium(IV) With Phosphoric Acid

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 4, pp 832 - 841 (USSR)

ABSTRACT: The authors already previously (Ref 1) investigated the oxidation of Ir(III) and gave vent to some suppositions concerning the red-violet intermediates and blue complex compounds formed on this occasion. The present paper deals with the explanation of the composition of these compounds. By evaporation of $H_2[IrCl_6]$, at first in $HClO_4$, and then in H_2SO_4, a highly hygroscopic substance was obtained, the light absorption curves of which at different water contents are shown in figure 1. The analysis of this compound is given. The potentiometric titration with Mohr's salt (Fig 2) confirms the quadrivalence of iridium. The determination of magnetic susceptibility carried out by V. I. Belova indicates a complex structure. From the solutions of this compound in $HClO_4$, H_3PO_4, and HCl, $BaSO_4$ is immediately precipitated with $BaCl_2$.

Card 1/3

Complex Compounds of Iridium(IV) With Phosphoric Acid S/078/60/005/04/011/040 B004/B007

Herefrom the conclusion is drawn that the SO_4^{2-}-ions are located in the outer region. In water, hydrolysis with the separation of insoluble products occurs. In concentrated KCl-solution, on the other hand, the color changes from red to blue accompanied by an increase in pH (Fig 3). For the red complex cation of the bi- or multicomponent aquo-hydroxo-compound of Ir(IV) the formula

$\left[(H_2O)_2Ir\begin{matrix}OH\\OH\end{matrix}OH\begin{matrix}OH\\OH\end{matrix}Ir(H_2O)_2\right]_2(SO_4)_3$ is suggested, which appears to be confirmed by the thermogram (Fig 4) plotted by L.M. Zaytsev and by the analyses of the intermediates of thermal decomposition (Table 1). The blue complex phosphate of Ir(IV) was produced as ammonium- and as potassium salt. $\left[(H_2PO_4)_3Ir\begin{matrix}O\\O\\O\end{matrix}Ir(H_2PO_4)_3\right]^{4-}$ is suggested as structural formula of the complex anion. The analysis for H_2O carried out according to A. B. Yelitsur (Ref 4) confirmed that the complex anion contains no H_2O-molecules.

Card 2/3

Complex Compounds of Iridium(IV) With Phosphoric Acid

69016
S/078/60/005/04/011/040
B004/B007

Figure 5 shows the thermogram of potassium salt, figure 6 the dependence of the pH on the concentration of the solution, and figure 7 the curve of potentiometric titration. The experimental results and the analyses permit the conclusion to be drawn that the composition of the complex ion depends on the pH of the medium, and that rearrangements easily occur in its inner sphere, which contains acid and basic groups. The compounds obtained are acid salts of polybasic acids. From the aqueous solution of the K- and NH_4-salt of the phosphate complex the insoluble Ba-, Ag-, and quinolonium salts were produced and analyzed. In all compounds obtained and investigated, the quadrivalence of iridium could repeatedly be proved by potentiometric titration (Table 2). There are 7 figures, 2 tables, and 4 references, 3 of which are Soviet.

SUBMITTED: August 11, 1959

Card 3/3

GINZBURG, S.I.; YUZ'KO, M.I.; SAL'SKAYA, L.G.

Complex iridium trisulfates. Zhur.neorg.khim. 8 no.4:839-846 Ap '63. (MIRA 16:3)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR.

(Iridium compounds)

GINZBURG, S.I.; SAL'SKAYA, L.G.

Photometric determination of platinum as bromide complexes.
Zhur.anal.khim. 17 no.4:492-494 Jl '62. (MIRA 15:8)

1. N.S.Kurnakov Institute of General and Inorganic Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Platinum--Analysis) (Bromoplatinates)

SAL'SKIY, D.L., gornyy inzhener.

Supporting empty blind passes in the back of longwalls using the pillar mining methods. Ugol' 31 no.10:22 O '56. (MLRA 9:11)

1. Rutchenkovskiy gornyy tekhnikum.
(Mine timbering)

SAL'SKIY, Valentin Aleksandrovich [Sal's'kyi, V.O.]; VINOGRADOV, K.O., doktor biol. nauk, prof., vidp. red.; BRAGINSKIY, L.P. [Brahins'kyi, L.P.], vidavn. red.; KORMILO, M.T., tekhn. red.

[Mollusks of the northwestern part of the Black Sea] Moliusky pivnichno-zakhidnoi chastyny Chornoho moria. Kyiv, Vyd-vo Akad. nauk URSR, 1958. 40 p. (MIRA 11:7)
(Black Sea--Mollusks)

AUTHOR: Sal'skiy, V.A. 26-58-5-56/57

TITLE: On Black-Sea Oysters (O chërnomorskikh ustritsakh)

PERIODICAL: Priroda, 1958, Nr 5, pp 127 - 128 (USSR)

ABSTRACT: The author gives a report on the history of the Black-Sea oyster trade, the oyster's food value and how to eat oysters.

ASSOCIATION: Odesskaya biologicheskaya stantsiya instituta gidrobiologii AN USSR (Odessa Biological Station of the Institute of Hydrobiology of the AS UkrSSR)

AVAILABLE: Library of Congress

Card 1/1

1. Oysters - Black Sea

SAL'SKIY, V. A. Cand Biol Sci -- (diss) "Mollusks of the northwestern Black Sea."
Kiev, 1959. 16 pp (Acad Sci UkSSR. Inst of Zoology), 200 copies (KL, 45-59, 145)

SAL'SKIY, V.A.

Oysters of Yegorlyk Bay [with summary in English]. Zool.zhur. 38 no.1:132-133 Ja '59. (MIRA 13:4)

1. Odessa Biological Station, Institute of Hydrobiology, Academy of Sciences of the Ukrainian S.S.R.
(Yegorlyk Bay--Oysters)

SAL'SKIY, V.A. [Sal's'kyi, V.O.]

Distribution of mollusks of the genus Abra (Syndesmya) in the northwestern part of the Black Sea. Nauk.zap.Od.biol.sta. no.2:49-54 '60. (MIRA 14:11)
(BLACK SEA--LAMELLIBRANCHIATA)

SAL'SKIY, V.A. [Sal's'kyi, V.O.]

Preliminary results of the study of fouling of sunk ships by divers in Yegorlytskiy Gulf. Nauk.zap.Od.biol.sta. no.2:102-103 '60. (MIRA 14:11)

(YEGORLYTSKIY LIMAN--FOULING OF SHIP BOTTOMS)

SAL'SKIY, V.A. [Sal'skyi, V.O.]

Materials on the zeogoography of mullusks of the northwestern part of the Black Sea. Nauk. zap. Od. biol. sta. no.3:65-70'61. (MIRA 16:6)

(BLACK SEA--MOLLUSKS)

KULEV, L. P. [deceased]; SAL'SKIY, V. A.; LEBEDEV, A. K.; SHABROV, V. P.

Ozonolysis of a low-grade technical phenanthrene. Preparation of 3,8-dimetholy-4,5,6,7-dibenzo-1,2-dioxocyclooctane and 2'-formyldiphenyl-2-carboxylic acid. Zhur. VKHO 7 no.5:599-600 '62. (MIRA 15:10)

1. Tomskiy politekhnicheskiy institut.

(Phenanthrene) (Ozonization)

SAL'SKIY, V.A. [Sal's'kyi, V.O.]

Mollusks of the Zernov Phyllophora field in the northwestern part of the Black Sea. Nauk.zap.Od.biol.sta. no.5:12-15 '64.

Acclimatization of the Far-Eastern prawn Pandalus kessleri (P. latirostris) in the Khadzhibey Liman. Ibid.:107-108 (MIRA 18:1)

SALTAKAZIN, N.A., aspirant

Application of V.P. Pilatovskii's operational method of approximation to the solution of one problem involving the radial flow of an elastic fluid in an elastic stratum. Sbor. nauch. trud. Kuib. indus. inst. no.8:309-322 '59. (MIRA 14:7)
(Calculus, Operational) (Elasticity) (Hydrodynamics)

SALTAMANOVA, F.

Increase control over bonus payments. Fin.SSSR 20 no.12:69 D '59. (MIRA 12:12)

1. Starshiy inspektor Moskovskogo gorodskogo kommunal'nogo Stroybanka.
(Moscow--Construction industry--Finance)

SALTAN, I.I.

Simultaneous twisting of the intestines and perforation of a gastric ulcer. Khirurgiia no.7:78 Jl '55 (MLRA 8:12).

1. Iz khirurgicheskogo otdeleniya (zav. L. Ye. Osokin) Pskovskoy oblastnoy bol'nitsy.
(INTESTINES--OBSTRUCTION) (STOMACH--ULCERS)

SAITAN, I.I.

Removal of a large osteochondroma of the left shoulder with reconstruction by transplantation of the fibula. Khirurgiia, Moskva 32 no.9:82-83 S '56. (MIRA 12:7)

1. Iz khirurgicheskogo otdeleniya (zav. - zaslushennyy vrach RSFSR S. M. Spesivtsev) Pskovskoy bol'nitsy (nauchn. rukovoditel' dots. V.V. Krestovskiy)

(ARM--TUMORS) (FIBULA--TRANSPLANTATION)

SAITAN, I. I.

SAITAN, I.I.

Perfecting the skills of physicians is at present our most important task. Zdrav.Ros.Feder. 1 no.5:25-26 My '57. (MIRA 10:11)

1. Glavnyy vrach Pskovskoy oblastnoy bol'nitsy.
(MEDICINE--STUDY AND TEACHING)

SALTAN, I.I., zasluzhennyy vrach RSFSR

Rural surgery. Vest. khir. no.12:3-7 '62. (MIRA 17:11)

1. Glavnyy khirurg Pskovskogo oblastnogo otdela zdravookhraneniya.

SALTAN, I.I., zasluzhennyy vrach RSFSR

Arthroplasty of the elbow joint using homograft from lyophilized rib cartilage. Vest. khir. no. 6:92-95 '65. (MIRA 18:12)

1. Iz ortopedo-travmatologicheskogo otdeleniya (zav. - zasluzhennyy vrach RSFSR S.M. Spesivtsev) Pskovskoy oblastnoy bol'nitsy (nauchnyy rukovoditel' - prof. V.S. Balakina).

SALTAN, I.I., zasluzhennyy vrach RSFSR

Arthroplasty of the hip joint using homoplastic lyophilized cartilage. Vest. khir. 93 no.8:79-83 Ag '64. (MIRA 18:7)

1. Iz ortopedo-travmatologicheskogo otdeleniya (zav. - zasluzhennyy vrach RSFSR S.M.Spesivtsev) Pskovskoy oblastnoy bol'nitsy (glavnyy vrach - zasluzhennyy vrach RSFSR A.M.Nikolayeva, nauchnyy rukovoditel' - prof. V.S.Balakina).

SALTAN, P. L.

6

Operation of the pitch-coke oven with continuous charging. M. A. Stepanenko, N. I. Matusyak, T. Ya. Gogoleva, P. L. Saltan, B. N. Moroz, and P. Z. Blenkii. *Koks i Khim.* 1956, No. 6, 28–32.—In a Zaporozhe, Ukraine, pitch-coke plant a medium pitch from a near-by tar distillery is delivered in the liquid state to the prepn. works, mixed with medium pitch dusts, and blown with air to raise its m.p. The oven charge, a mixt. of this high-temp. pitch with pitch dusts in the ratio of 76 to 24, goes to a set of measuring tanks each of which supplies a battery of 5 ovens. Automatic charging of an oven with 12 to 13 tons of pitch at 300° to 330° requires about 3 hrs. Oven wal. temps. at the beginning of the charge is 1020°; max. temp., 1260°; coking time, 17.5 hrs. Plots of temps. of oven wals shew an initial drop to 600° as charging begins, followed by a slow steady rise to the max. Absence of sharp temp. variations due to this method of charging contributes to a more uniform evolution of gases and more steady pressure conditions. Experience of more than 1.5 years of continuous charging of 135° to 160° m.p. pitch shows the oven walls to be in satisfactory condition.

H. L. Olin

SALTAN, P.L

68-7-11/16

AUTHORS: Stepanenko, M.A., Matusyak, N.I. (UKhIN), Kuleshov, P.Ya., and Saltan, P.L.

TITLE: Intensification of the Process of Production of High Melting Pitch. (Intensifikatsiya protsessa polucheniya vysokoplavkogo peka).

PERIODICAL: Koks i Khimiya, 1957, Nr 7, pp.43-46 (USSR)

ABSTRACT: The use of oxygen for the intensification of the process of production of high melting pitch was investigated on a laboratory and works' scale. The comparison of laboratory experiments of blowing medium pitch, pitch tar and their mixture (75% + 25% respectively) with air and oxygen is given in Table 1 and Fig.1. When blowing with oxygen (18 l/hr per kg of pitch) the waste gas contained about 60 to 70% of oxygen. Better utilisation of oxygen was obtained when additional mechanical stirring was applied, so that oxygen consumption was reduced to 6 l/hr per kg of pitch per hr (Table 2). Industrial experiments were carried out in two continuously operating reactors joined in series. Dimension of the reactor: d = 3 m; h total 4.7 m, the ratio of h pitch to d = 1.6; charge 59 tons. The comparison of results obtained in laboratory and works' experiments is given in Table 3. It was found that by replacing air with oxygen,

Card 1/2

AUTHORS: Saltan, P. L. and Peresadenko, I. N. 68-58-6-5/21

TITLE: Methods of Increasing Service Life of Coal Pitch Coke Ovens (Puti udlineniya sroka sluzhby pekokoksovykh pechey)

PERIODICAL: Koks i Khimiya, 1958, Nr 6, pp 13-16 (USSR)

ABSTRACT: A characteristic feature of the coal pitch coke ovens is a short duration of their service life, caused mainly by the growth of refractory brickwork. The heating up practice has also a substantial influence on the life of the ovens. The heating up conditions of the Zaporozh'ye coke ovens during which a uniform expansion of brickwork was obtained is described in some detail. Coking conditions and the rate of growth of the brickwork during subsequent operation (3 years) are shown in tables and graphs. It is concluded that the role of expansion of ovens brickwork during their operation can be used as an indication of the correctness of the chosen coking conditions. Continuous charging of ovens is superior to intermittent charging. With continuous charging, preheating of charged pitch to 300-320°C and the softening temperature of the pitch of 140-150°C the period of coking should be 1.5 to 2 hours longer than the time required to

Card 1/2

Methods of Increasing Service Life of Coal Pitch Coke Ovens 68-58-6-5/21

obtain the same wall temperature which prevailed before charging. The correctness of the choice of coking period can be checked by measurements of the rate of expansion of the brickwork. The optimal coking period should secure the expansion of the brickwork within the limits of 0.3-0.8 mm per month.
There are 3 tables and 3 figures.

ASSOCIATIONS: Zaporozhskiy koksokhimicheskiy zavod (Zaporozh'ye Coal-tar Chemical Plant) and Teplotekhstantsiya

1. Ovens--Maintenance

Card 2/2

KICHIGIN, A.F., dotsent; KUDRYASHOV, V.P., dotsent; SALTANOV, A.D., inzh.; YAREMA, V.D., inzh.

Experimental research on breaking coal from a massif. Izv.vys. ucheb.zav.; gor.zhur. no.4:97-105 '60. (MIRA 14:4)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta.

(Coal mines and mining)

KICHIGIN, A.F., dotsent; SALTANOV, A.D., inzh.; YAREMA, V.D., inzh.

Splitting of coal and rock by tearing away. Izv.vys. ucheb.zav.; gor.zhur. no.7:75-81 '60. (MIRA 13:7)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin.
(Mining engineering)

KICHIGIN, A.F., dotsent; LOBODA, P.A., inzh.; SALTANOV, A.D., inzh.; YAREMA, V.D., dotsent

Experimental design of the cutter of a stoping cutter-loader. Izv. vys. ucheb. zav.; gor. zhur. no.11:91-94 '61. (MIRA 15:1)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta.
(Mining machinery)

KICHIGIN, A.F., kand.tekhn.nauk; MATSUTKEVICH, O.V., inzh.; SALTANOV, A.D., inzh.; SEVERINOV, V.S., inzh.

Device for determining the parameters of rock breaking by high-energy impact. Izv. vys. ucheb. zav.; gor. zhur. no. 11:127-132 '60. (MIRA 13:12)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta Karagandinskogo politekhnicheskogo instituta.

(Mining machinery) (Dynamometer)

KICHIGIN, A.F., inzh.; KAZAK, Yu.N., inzh.; YANTSEN, I.A., inzh.; SALTANOV, A.D., inzh.

Mechanical hydraulic mining machine. Izv. vys. ucheb. zav.; gor. zhur. no.12:72-75 '61. (MIRA 16:7)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta.
(Mining machinery)

KICHIGIN, A.F., inzh.; SALTANOV, A.D., inzh.; YAREMA, V.D., inzh.

Testing a mining cutter-leader equipped with a new working part. Shakht.stroi. 6 no.4:19-22 Ap '62. (MIRA 15:4)

1. Karagandinskiy politekhnicheskiy institut (for Kichigin, Saltanov). 2. Kombinat Karagandashakhtostroy (for Yarema).
(Mining machinery—Testing)

KICHIGIN, A.F.; PIROGOV, V.K.; SALTANOV, A.D.; LAZUTKIN, A.G.

Narrow-cut UKO-2 cutter-loader working on the principle of breaking away coal from the massif. Nauch. trudy KNIUI no.13: 241-243 '64 (MIRA 18:1)

KICHIGIN, A.F.; POLOVNEV, G.P.; SALTANOV, A.D.; YAREMA, V.D.

Fracture of rock by breaking away. Nauch. trudy KNIUI no.13: 243-247 '64 (MIRA 18:1)

KICHIGIN, A.F., dotsent; IGNATOV, S.N., inzh.; VASILEVSKIY, V.V., inzh.
SALTANOV, A.D., inzh.; YAREMA, A.D., kand.tekhn.nauk

Energy indices of rock breaking in diamond cutters of rock working cutter loaders, operating according to the principle of breaking away rock from the massif. Izv.vys.ucheb.zav.; gor.zhur. 8 no.11:94-96 '65. (MIRA 19:1)

1. Karagandinskiy politekhnicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnichnogo transporta. Submitted October 26, 1964.

SHEVELEV, B.P.; SALTYKOV, A.L.

Distribution of gas to the Lenin State Farm. Gaz. prom. 9 no.7: 30-34 '64. (MIRA 17:8)

DEYCH, M.Ye.; STEPANCHUK, V.F.; SALTANOV, G.A.; TSIKLAURI, G.V.

Experimental study of condensation jumps. Teplofiz. vys. temp. 2 no.5:789-796 S-O '64. (MIRA 17:11)

1. Moskovskiy energeticheskiy institut.

L 1454-66 EWT(1)/EWP(m)/EWA(d)/FCS(k)/EWA(h)/EWA(c) WW
ACCESSION NR: AP5016343 UR/0281/65/000/003/0105/0110
621.1.013

AUTHOR: Stepanchuk, V. F. (Moscow); Saltanov, G. A. (Moscow) 28 B

TITLE: Method of calculating the compression shocks in wet steam within a wide range of pressures

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 3, 1965, 105-110

TOPIC TAGS: compression shock, shockwave, steam turbine

ABSTRACT: The method of calculation of compression shocks (shockwaves) occurring at higher pressures is developed; the thermodynamic characteristics of the working fluid are determined by means of tables. These assumptions are made: (1) The finely dispersed moisture particles have velocities identical with those of the vapor phase; (2) Phase-equilibrium conditions are maintained during the shockwave process. It is found that: (1) The shockwave calculation under the above condition can be performed by using the tabulated thermodynamic data,

Card 1/2

L 1454-66
ACCESSION NR: AP5016343

without dealing with the state equations; (2) The nomographs given in the article can essentially cut the computation work; (3) The wet-steam shockwaves are qualitatively similar to the shockwaves in a single-phase liquid (strong and weak solutions, maximum angle-of-flow deviation). Orig. art. has: 2 figures and 26 formulas.

ASSOCIATION: none

SUBMITTED: 06Jan65 ENCL: 00 SUB CODE: PR

NO REF SOV: 004 OTHER: 002

Card 2/2

L 35458-65 EWP(m)/EWT(1)/FCS(k)/EWA(d)/EWA(1) Pd-1 WW

ACCESSION NR: AP5007799 S/0231/65/000/001/0122/0128

AUTHOR: Deych, M. Ye.; Stepanchuk, V. F.; Saltanov, G. A.; Tsiklauri, G. V. 23 B

TITLE: Experimental studies of condensation discontinuities within an axially symmetric water vapor flow

SOURCE: AN SSSR. Izvestiya. Energetika i transport, no. 1, 1965, 122-128

TOPIC TAGS: condensation discontinuity, nozzle flow, supersonic vapor flow, water vapor flow, supercooled vapor flow, Laval nozzle

ABSTRACT: The study of high-velocity vapor flows in the presence of phase transitions is of great importance for the theory of steam turbines, atomic power engineering, etc. The present investigation is a continuation of previously published works (Izv. AN SSSR, Energetika i transport, 1964, no. 3; Teplofizika vysokikh temperatur, 1964, no. 3; Ibid., 1964, no. 5) carried out at the Kafedra parovykh i gazovykh turbin (Department of vapor and gas turbines) of the MEI. The same references describe the experimental equipment and procedures used for the subsequent experimental studies of condensation discontinuities within the free flow following the cross-section of tapered nozzles and within the widening portion of the Laval nozzle. Results within the nozzle flow of humid vapor showed that:

Card 1/2

L 35458-65

ACCESSION NR: AP5007799 0

1) condensation discontinuities appearing within the free supersonic flow and in the widening portion of the Laval nozzle modify the structure of the flow in an essential way; namely, behind the condensation discontinuity, one observes a weakening and even disappearance of the pressure discontinuity, thus modifying the operating mode of the Laval nozzle; 2) the location of the condensation discontinuity depends on the overheating factor and the time interval needed for the vapor to expand from the upper boundary curve to the discontinuity, and 3) the maximum supercooling is a single-valued function of the time of expansion of the supercooled vapor. The authors supply appropriate empirical equations. Orig. art. has: 4 formulas and 7 figures.

ASSOCIATION: none

SUBMITTED: 04Jun64 ENCL: 00 SUB CODE: ME

NO REF SOV: 004 OTHER: 006

Card 2/2

L 7828-66 EWT(1)/EWP(m)/FCS(k)/ETC(m)/EWA(1) WW

ACC NR: AP5026850 SOURCE CODE: UR/0170/65/009/004/0438/0443

AUTHOR: Sepanchuk, V. G.; and Saltanov, G. A.

ORG: Lenin Power Institut, Moscow (Moscovskiy ordena Lenina energeticheskiy institut)

TITLE: Calculation of condensation jumps in the region of small parameters

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 4, 1965, 438-443

TOPIC TAGS: vapor condensation, nozzle flow, gas dynamics, heat of vaporization

ABSTRACT: In general, in a stream of wet steam there appear oblique condensation jumps. A condensation jump is fllowed by a bunch of rarefaction waves, the first characteristic of which coincides with the front of the jump. The velocity of sound in the region of small moisture contents is sufficiently close to the velocity of sound in dry saturated steam which, in turn, is determined as $a = (kRT)^{\frac{1}{2}}$. The equation $pV=RT$ is applicable to the supercooled steam up to the condensation jump and to the saturated steam after the condensation jump. The article makes the following simplifying assumption: in the region of small pressures (for water vapo- the static pressure in front of the condensation jump is less than 0.5×10^5 newtons/m^2), it can be assumed that the saturation temperatures before and after the condensation

Card 1/3 UDC: 536.423.4

jump are equal. This applies also to the latent heat of evaporation. In calculation of a condensation jump, the given quantities are p_0, T_0, and the geometry of the nozzle. The problem can be solved either on the basis of the kinetics of the phase transitions in a stream of supercooled steam, which leads to difficult calculations, or on the basis of an empirical expression (given in the article). Further calculation of the condensation jump is carried out on the basis of the equations of gas dynamics: the equation of continuity, the momentum equation, and the energy equation. The results are correlated on the basis of the following final equation:

$$\left[\sqrt{1+\frac{4(T_1'-\Delta T)}{kT_1'}\left(\frac{p_2}{p_1}-1\right)}-1\right]\frac{K}{2\left(1-\frac{p_1}{p_2}\right)}=$$

$$=1-\frac{c_p\Delta T}{r}+\frac{kRT_1'}{4r}\left[\frac{2(T_1'-\Delta T)}{kT_1'}\left(\frac{p_2}{p_1}-1\right)+\right.$$

$$\left.+\sqrt{1+\frac{4(T_1'-\Delta T)}{kT_1'}\left(\frac{p_2}{p_1}-1\right)}-1\right]. \qquad (7)$$

L 7828-66
ACC NR: AP5026850

and are further presented in the form of a nomograph for the easy calculation of the condensation jumps. The nomograph is based on the above formula. The article also gives a figure showing the distribution of the static pressure with a Laval nozzle. Orig. art. has: 8 formulas and 3 figures

SUB CODE: ME, TD/ SUBM DATE: 23Nov64/ ORIG REF: 002/ OTH REF 001

Card 3/3

L 61522-65 EWT(1)/EWP(m)/EWT(m)/EWG(v)/T/EWP(t)/FCS(k)/EWA(c)/EWA(1) Pd-1/
Pa-5/Pi-4 IJP(c) JD

ACCESSION NR: AP5016702 UR/0294/65/003/003/0467/0472
533.6.07

40
39
B

AUTHOR: Shumyatskiy, B. Ya.; Kibardin, Yu. A.; Saltanov, G. A.

TITLE: Supersonic wind tunnel with a dissociating working body

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 3, 1965, 467-472

TOPIC TAGS: dissociation, dissociating gas, wind tunnel, supersonic wind tunnel, dissociating iodine, diatomic gas dissociation

ABSTRACT: The possibility of using iodine as the working gas in a shock tube for investigating the dissociation of diatomic gases and its effects in large supersonic air flows past bodies is discussed. The advantages and inconveniencies of iodine with respect to its use as the working gas in a shock tube are enumerated. Diagrams of the state of the gas, with dissociation taken into account, calculated for temperatures ranging up to 1500C and pressures from 10^{-4} to 10 atm are given. The data obtained here made it possible to estimate the gas dynamic parameters and power requirements for two different experimental setups designed for investigating high-velocity dissociating diatomic gas flows. The first version consisted of a closed-cycle supersonic wind tunnel with means for heating iodine to 600—1000C, with the cycle closing in the liquid phase (see Fig. 1 of the Enclosure). The second version, which

Card 1/3

L 66922-65

ACCESSION NR: AP5016702

employed the same wind tunnel and apparatus except the heat exchanger, is an open-cycle wind tunnel. The respective advantages and disadvantages of the two versions are outlined and evaluated. The authors stress the general character of the proposed schemes for experimental investigations and their value as a starting point for future projects. Orig. art. has: 5 figures. [AB]

ASSOCIATION: Nauchno-issledovatel'skiy institut vysokikh temperatur (Scientific Research Institute of High Temperatures)

SUBMITTED: 13Aug64 ENCL: 01 SUB CODE: ME

NO REF SOV: 007 OTHER: 002 ATD PRESS: 4037

Card 2/3

L 61522-65

ACCESSION NR: AP5016702

ENCLOSURE: 01

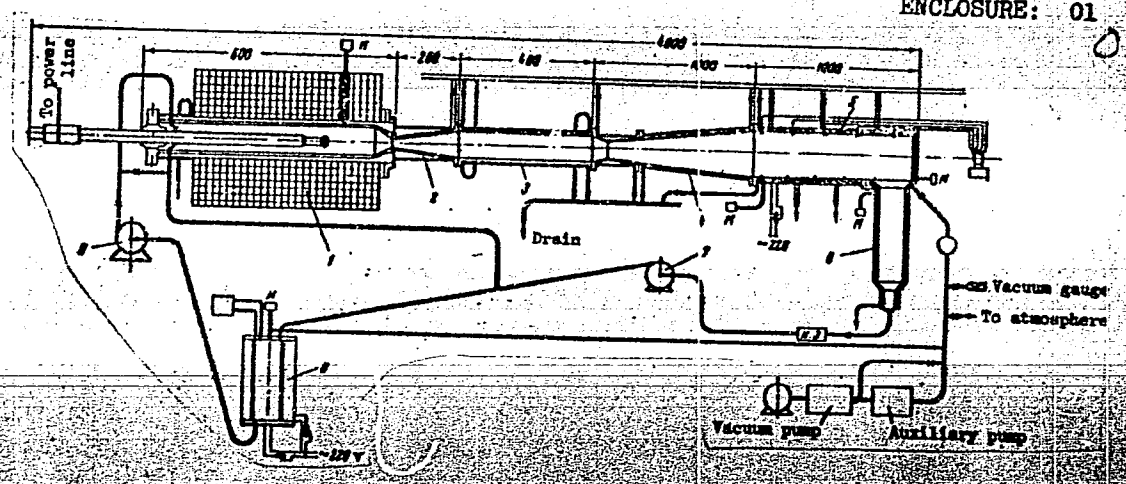

Fig. 1. Schematic diagram of wind tunnel

1 - Heater; 2 - nozzle; 3 - test section; 4 - diffusor;
5 - tubular heat exchanger; 6 - condenser; 7 - pump;
8 - electric arc heater.

Card 3/3

DEYCH, M.Ye., doktor tekhn. nauk, prof.; STEPANCHUK, V.F., kand. tekhn. nauk; SALTANOV, G.A., inzh., dissertant

Calculation of condensation jumps in the wet steam region. Teploenergetika 12 no.4:81-84 Ap '65. (MIRA 18:5)

1. Moskovskiy energeticheskiy institut.

L 00490-66 EWP(m)/EWT(1)/FCS(k)/EWA(d)/EWA(1)

ACCESSION NR: AP5020562 UR/0294/65/003/004/0600/0608
532.529.5

31
30
B

AUTHOR: Stepanchuk, V. F.; Saltanov, G. A.

TITLE: Calculation of transverse skips in condensation

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 4, 1965, 600-608

TOPIC TAGS: condensation reaction, fluid flow, supercooling, steam

ABSTRACT: The article presents a method for the calculation of transverse skips in condensation in the flow of supercooled steam in ultrasonic nozzles. In this theoretical treatment, the following assumptions were made: 1) the accelerated flow of steam permits deep supercooling, 2) initial condensation occurs only in condensation skips, 3) the drops of moisture which appear in the condensation skips have the same velocity and direction of movement as the main flow of steam, and 4) the supercooled steam before the condensation skip and the saturated steam after the condensation skip obey the Clapeyron equation. The region of values of M_1 near unity is a forbidden zone for condensation skips. These skips

Card 1/2

L 00490-66

ACCESSION NR: AP5020562

can be strong or weak and they can exist in a comparatively narrow region of M_1 numbers-- between a minimal value of M_1 and the case where the state after the skip corresponds to dry saturated steam. Orig. art. has: 14 formulas and 2 figures

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

SUBMITTED: 23Apr64 ENCL: 00 SUB CODE: ME, GC

NR REF SOV: 008 OTHER: 005

Card 2/2

STEPANCHUK, V.F. (Moskva); SALTANOV, G.A. (Moskva)

Methods for calculating condensation steps in a flow of wet steam in a wide range of pressures. Izv. AN SSSR. Energ. i transp. no.3:105-110 My-Je '65.

(MIRA 18:12)

1. Submitted January 6, 1965.

DEYCH, M.Ye., doktor tekhn. nauk, prof.; STEPANCHUK, V.F., kand. tekhn. nauk, dotsent; MAYORSKIY, Ye.V., inzh.; SALTANOV, G.A., inzh.

Use of an optical method in studying the flow of wet steam. Izv. vys. ucheb. zav.; energ. 8 no.11:87-91 N '65. (MIRA 18:11)

1. Moskovskiy ordena Lenina energeticheskiy institut.

FILIPPOV, A.S., kand.tekhn.nauk; SALTANOV, G.F., inzh.

Hot tops heated by mixtures of exothermic materials. Trudy Ural.politekh.inst. no.89:154-161 '59. (MIRA 12:8)
(Founding)

FOFANOV, A.A., kand.tekhn.nauk; LEYSOV, Ye.I., inzh.; YEL'KIN, S.A., inzh.; MILYAYEV, M.N., inzh.; PASTUKHOV, A.I., kand.tekhn.nauk; DZEMYAN, S.K., inzh.; KOSNAREV, A.S., inzh.; KLEYN, A.L., kand.tekhn.nauk; DANILOV, A.M., inzh.; FILIPPOV, A.S., kand.tekhn.nauk; SALTANOV, G.F., inzh.; VETROV, B.G., inzh.; PISARENKO, G.A., kand.tekhn.nauk; RADYA, V.S., inzh.; GEROTSKIY, V.A., inzh.

In the Ural Mountain Region Scientific Research Institute for Ferrous Metals. Stal' 22 no.10:892,916,938,953 0'62. (MIRA 15:10)
(Ural Mountain region—Metallurgical research)

SALTANOV, L.; YEVGEN'YEV, Yu.; SIDOROV, B.

Exchange of experience. Radio no.4:54 Ap '61. (MIRA 14:7)
(Radio, Shortwave) (Television)

ACC NR: AR7000838 SOURCE CODE: UR/0058/66/000/009/G001/G001

AUTHOR: Saltanov, M. V.; Tkalich, V. S.

TITLE: Nonstationary problem in magnetic gas dynamics

SOURCE: Ref. zh. Fizika, Abs. 9G1

REF SOURCE: Visnyk Kyyivs'k. un-tu. Ser. fiz. ta khim., no. 6, 1966, 75-77

TOPIC TAGS: gas dynamics, linear equation, nonstationary problem, magnetic gas dynamics, relativistic problem, three dimensional problem, symmetry integral, steady state motion, Riemann wave, nonsteady flow, cyclic coordinate, hydrodynamics

ABSTRACT: The relativistic nonstationary problem of gas dynamics and magnetic gas dynamics is analyzed in the three-dimensional form for a case of two cyclic coordinates. A complete set of symmetry integrals is obtained. These are then used to derive an equation identical, except for the notations, to Rudnev's form of Sedov's equation in the theory of plane steady-state motions. Conditions are obtained in which the problem is reduced to the solution of a linear equation.

Card 1/2 UDC: 538.4

ACC NR: AR7000838

Riemann waves are analyzed. An auxiliary function is introduced which satisfies the linear equation, and by means of which all the physical parameters are expressed in their final form. [Translation of abstract] [SP]

SUB CODE: 20/

Card 2/2

SALTANOV, N. V. (Sukhumi)

"Partial Vortex Conservation Law in Multicomponent Magnetohydrodynamics."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

84735

S/057/60/030/010/017/019
B013/B063

2407, 2207, 2307, 2507 only

10.8000

AUTHORS: Saltanov, N. V., Tkalich, V. S.

TITLE: Magnetohydrodynamic Waves of Finite Amplitude

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 10, pp. 1253 - 1255

TEXT: From the set of equations (1) for an ideal, incompressible fluid of ideal conductivity the authors derived equation (7), $\left[\left(\frac{\partial}{\partial t} + v_0 \frac{\partial}{\partial r}\right)^2 - v_\alpha^2 \frac{\partial^2}{\partial r^2}\right]\vec{\psi} = 0$; $v_\alpha^2 = H_0^2/4\pi\varrho$, on the condition that all physical quantities depend on time and one coordinate. The general solution (Ref. 4) of equation (7) is given by $\vec{\psi} = \vec{\psi}_+(r - \int v_0 dt + v_\alpha t) + \vec{\psi}_-(r - \int v_0 dt - v_\alpha t)$ (8), where the vectors $\vec{\psi}_+$ and $\vec{\psi}_-$ are arbitrary functions of their arguments. Equation (9), $\vec{h} = \vec{\psi}_+' + \vec{\psi}_-'$, $\vec{v} = (1/\sqrt{4\pi\varrho})(\vec{\psi}_+' - \vec{\psi}_-')$, holds for the fields $\vec{h}$ and $\vec{v}$. This solution describes the sum of two waves

Card 1/2

Magnetohydrodynamic Waves of Finite Amplitude S/057/60/030/010/017/019
B013/B063

propagating along a constant magnetic field in opposite directions. The conducting fluid is assumed to propagate along the field at a velocity $v_0(t)$. The latter is an arbitrary time function. In this wave, the vector of the variable part of the magnetic field strength is arbitrarily polarized. The following relations hold for $v_0 = 0$:

$$\left.\begin{aligned} \vec{\psi} &= \vec{\psi}_+(r + v_a t) + \vec{\psi}_-(r - v_a t) \\ \vec{h} &= \vec{\psi}'_+ + \vec{\psi}'_-, \quad \vec{v} = (1/\sqrt{4\pi\rho})(\vec{\psi}'_+ - \vec{\psi}'_-) \end{aligned}\right\} \qquad (10).$$

In waves having the form of (10), the vectors $\vec{h}$ and $\vec{v}$, in general, are not parallel. As a result, there is one component of the alternating field in the direction of a constant magnetic field (contrary to the Alfvèn and Valen waves). The authors thank Ye. F. Tkalich for discussions. There are 4 Soviet references.

SUBMITTED: April 8, 1960

Card 2/2

88766

10,8000
24.2120

S/040/60/024/006/020/024
C 111/ C 333

AUTHOR: Saltanov, N. V. (Sukhumi)

TITLE: On the Constancy of the Vortex in Multi-Component Magneto-Hydrodynamics

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol.24, No.6, p. 1123

TEXT: By applying the rot-operation on the equations of motion of an ideal plasma consisting of N(k = 1,2,..., N) kinds of ions the author obtains, with the aid of the equations for electrostatic induction, the relation

$$(2)\quad \frac{\partial \Omega_k}{\partial t} = \operatorname{rot} v_k \times \Omega_k, \qquad \Omega_k \equiv \operatorname{rot} v_k + \frac{\mu e_k}{c m_k} H ,$$

where v_k is the velocity, c the velocity of light, μ magnetic permeability, e_k and m_k charge and mass of the particle, and the index k denotes the kind of the ions.

Thus the constancy of the partial vortex Ω_k is analogous to the usual Helmholtz law.

Card 1/2

88766

S/040/60/024/006/020/024
C 111/ C 333

On the Constancy of the Vortex in Multi-Component Magneto-Hydrodynamics

The author mentions J. S. Gromeki. He thanks V. S. Tkalich.

There are 4 references: 3 Soviet and 1 English.

SUBMITTED: April 8, 1960

Card 2/2

SALTANOV, N.V. (Sukhumi); TKALICH, V.S. (Sukhumi)

Riemann waves. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6: 26-32 N-D '61. (MIRA 14:11)

(Magnetohydrodynamics)

10.2000
24.6712

28776 S/057/61/031/010/009/015
B109/B102

AUTHORS: Tkalich, V. S., and Saltanov, N. V.

TITLE: Waves of finite amplitude in non-ideal magnetohydrodynamics

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 10, 1961, 1231-1235

TEXT: The present paper deals with computing the properties of a wave of finite amplitude, propagating along a magnetic field, in dependence on conductivity, viscosity, and other plasma parameters. If V and H are functions of time and of a space coordinate r, the relations $H_1 = H_0/r^n$, $V_1 = v_0/r^n$ can be derived from the known basic equations

$$\left.\begin{aligned} &\frac{\partial \mathbf{H}}{\partial t} = \operatorname{rot}(\mathbf{V}\times\mathbf{H} - \nu_m \operatorname{rot}\mathbf{H}),\ \operatorname{div}\mathbf{H}=0,\ \operatorname{div}\mathbf{V}=0,\\ &\frac{\partial \mathbf{V}}{\partial t} + \nabla W = \mathbf{V}\times\operatorname{rot}\mathbf{V} - \frac{1}{4\pi\rho}\mathbf{H}\times\operatorname{rot}\mathbf{H} - \nu\operatorname{rot}\operatorname{rot}\mathbf{V},\\ &W \equiv \frac{V^2}{2} + \frac{p}{\rho} + F. \end{aligned}\right\} \quad (1)$$

Card 1/5

(H_0 denotes an arbitrary constant, $v_0 = v_0(t)$ an arbitrary function of time, $n = 0$ (plane symmetry) or 1 (cylinder symmetry), subscript 1 denotes the components of the vectors $\vec{V}$ and $\vec{H}$). The energy W of the unit mass of the fluid considered (without magnetic-field contribution) is assumed to be a linear function of the second and third space coordinates q_2 and q_3: $W = w(r,t) + Q_2 q_2 + Q_3 q_3$, where $Q_2(t)$, $Q_3(t)$ are arbitrary functions of time. In this case, the linear equations

$$\left.\begin{aligned} &\left(D_{2m} + \frac{\partial}{\partial r}\frac{v_0}{r^n}\right)H_2 = \frac{\partial}{\partial r}\frac{H_0}{r^n}V_2; \quad \left(D_2 + \frac{v_0}{r^n}\frac{1}{r^n}\frac{\partial}{\partial r}r^n\right)V_2 = \\ &= \frac{H_0}{4\pi\rho}\frac{1}{r^{2n}}\frac{\partial}{\partial r}r^n H_2 - \frac{Q_2}{r^n}, \\ &D_{2m} \equiv \frac{\partial}{\partial t} - \nu_m \frac{\partial}{\partial r}\frac{1}{r^n}\frac{\partial}{\partial r}r^n; \quad D_2 \equiv \frac{\partial}{\partial t} - \nu\frac{\partial}{\partial r}\frac{1}{r^n}\frac{\partial}{\partial r}r^n, \end{aligned}\right\} \quad (3)$$

$$\left.\begin{aligned} &\left(D_{3m} + \frac{v_0}{r^n}\frac{\partial}{\partial r}\right)H_3 = \frac{H_0}{r^n}\frac{\partial V_3}{\partial r}; \quad \left(D_3 + \frac{v_0}{r^n}\frac{\partial}{\partial r}\right)V_3 = \\ &= \frac{H_0}{4\pi\rho r^n}\frac{\partial H_3}{\partial r} - Q_3, \\ &D_{3m} \equiv \frac{\partial}{\partial t} - \nu_m\frac{1}{r^n}\frac{\partial}{\partial r}r^n\frac{\partial}{\partial r}; \quad D_3 \equiv \frac{\partial}{\partial t} - \nu\frac{1}{r^n}\frac{\partial}{\partial r}r^n\frac{\partial}{\partial r}. \end{aligned}\right\} \quad (4)$$

Card 2/5

Waves of finite amplitude...

hold for the second and third components of $\vec{H}$ and $\vec{V}$. By adequate specializations the results obtained are identical with those obtained by S. A. Regirer (DAN SSSR, 127, 983, 1959; IFZh, 2, no. 8, 1959), Ya. S. Uflyand (ZhTF, XXX, 799, 1960) and I. B. Chekmarev (ZhTF, XXX, 338, 1960; ZhTF, XXX, 920, 1960). Upon introducing the vector potential $\vec{a} \equiv (A_2, A_3)$ in (3), (4), the equation

$$\left.\begin{aligned}\left[\left(\frac{\partial}{\partial t}+v_0\frac{\partial}{\partial r}-\nu\frac{\partial^2}{\partial r^2}\right)\left(\frac{\partial}{\partial t}+v_0\frac{\partial}{\partial r}-\nu_m\frac{\partial^2}{\partial r^2}\right)-\frac{H_0^2}{4\pi\rho}\frac{\partial^2}{\partial r^2}\right]\mathfrak{a}=\\ =H_0\mathfrak{e}\times\mathbf{Q}+\mathbf{C}',\ \mathbf{Q}\equiv(Q_2, Q_3),\ \mathbf{C}\equiv(C_2, C_3),\end{aligned}\right\} \quad (9)$$

is obtained for $\vec{a}$, where $\vec{e}$ is the unit vector in the direction of r. Special cases: (A) $v_0 = \nu = \nu_m = \vec{Q} = \vec{C} = 0$. Then,

$$\left.\begin{aligned}A_2=\frac{h_{03}}{k}\sin(kr)\sin(\omega t+\varphi_3),\ A_3=-\frac{h_{02}}{k}\sin(kr)\sin(\omega t+\varphi_2),\\ \omega=\frac{skH_0}{\sqrt{4\pi\rho}},\ (s=\pm 1),\end{aligned}\right\} \quad (11)$$

Card 3/5

will be a solution of (9), where h_{02}, h_{03}, φ_2, φ_3 are arbitrary constants. From the vector potential one obtains as usually $\vec{H}$, $\vec{V}$, and $\vec{E}$:

$$\left.\begin{aligned} H_e &= h_{0e}\cos(kr)\sin(\omega t + \varphi_e), \\ V_e &= \frac{sh_{0e}}{\sqrt{4\pi\rho}}\sin(kr)\cos(\omega t + \varphi_e), \quad (e = 2, 3). \end{aligned}\right\} \tag{12}$$

$\vec{E} = -[\vec{V}\cdot\vec{H}]/c$. If there is a fluid layer of the thickness L between two layers of ideal conductance at r = 0 and r = L, the dispersion equation $\omega = sm\pi H_0/L\sqrt{4\pi\varrho}$ is obtained for this layer from the conditions of continuity, m being an integral number. (B) $\vec{Q} = \vec{C} = 0$: the solution of (9) is

$$A_e = a_{oe}\exp ik(r + \int v_1 dt),$$

$$v_1 = -v_0 + \frac{ik(\nu + \nu_m)}{2} + \frac{sH_0}{\sqrt{4\pi\varrho}}\sqrt{1 - \frac{\pi\varrho k^2(\nu - \nu_m)^2}{H_0^2}}, \tag{14}$$

where a_{oe} is an arbitrary complex constant, and k denotes the wave number

Card 4/5

(Im k = 0). From this follows

$$\left.\begin{aligned} H_e &= h_{0e}\, e^{-\gamma t}\cos(\Phi + \varphi_e),\quad V_e = \frac{a h_{0e}}{\sqrt{4\pi\rho}}\, e^{-\gamma t}\cos(\Phi + \Phi_0 + \varphi_e),\\ \Phi &= k\left[r + V\sqrt{1 - \pi\rho k^2 (\nu - \nu_m)^2}\,\middle|\, H_0^2\, \frac{a H_0}{\sqrt{4\pi\rho}}\, t - \int v_0 dt\right],\\ \gamma &= \frac{(\nu + \nu_m) k^2}{2},\quad \sin\Phi_0 = \frac{a\sqrt{\pi\rho}\, k (\nu - \nu_m)}{H_0}, \end{aligned}\right\} \qquad (15)$$

where h_{oe}, φ_e are arbitrary real constants. (15) represents a signal of finite amplitude in a finite conducting fluid, moving at the velocity v_o along H_o. In case of $|H_o| \gg H_*$ (where $H_* \equiv \sqrt{\pi\rho k^2 (\nu - \nu_m)^2}$) the propagation rate of the signal is approximately equal to the velocity in the ideal fluid. The authors thank Ye. F. Tkalich for discussions. Ya. I. Frenkel' (ZhTF, XIV, 97, 1944) is mentioned. There are 24 references: 18 Soviet and 6 non-Soviet. The three most important references to English-language publications read as follows: I. N. Kapur, Appl. Sci. Res., A8, 198, 1959; T. Kakutani, J. Phys. Soc. Jap., 15, 1316, 1960; W. E. Williams, J. Fluid. Mech., 8, 321, 1960.

SUBMITTED: January 9, 1961

Card 5/5

S/057/61/031/010/009/015
B109/B102

Waves of finite amplitude...

SUBMITTED: January 9, 1961

Card 6/6

34204
S/057/62/032/002/004/022
B104/B102

24.6714

AUTHORS: Tkalich, V. S., and Saltanov, N. V.

TITLE: Nonlinear Langmuir oscillations

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 2, 1962, 156-160

TEXT: The authors study plane, cylindrical and spherical oscillations of an electron plasma with allowance for the electric force, the pressure and frictional forces between the electrons and the surrounding ions and neutral particles. The authors proceed from the system

$$\left.\begin{aligned} &\frac{\partial v}{\partial t}+\frac{v\partial v}{\partial r}=-\frac{\partial p}{nm\partial r}-\left(\frac{e}{m}\right)E-\nu v,\\ &\frac{\partial r^k E}{r^k\partial r}=4\pi e(n_0-n),\quad \frac{\partial E}{\partial t}-4\pi env=0. \end{aligned}\right\} \qquad (1)$$

where n is the number of electrons per unit volume, n_o = const is the

Card 1/6

Nonlinear Langmuir oscillations

number of ions per unit volume, ν is the effective collision frequency between electrons and heavy particles, k = 0, 1,2 hold for plane, cylindrical and spherical cases, respectively. Using Lagrange variables the authors obtain

$$\frac{d^2r}{dt^2}+\nu\frac{dr}{dt}+\Omega^2 r+\frac{1}{mn\frac{\partial r}{\partial r_0}}\frac{\partial p}{\partial r_0}=\frac{C(r_0)}{r^k},\quad C(r_0)=\frac{4\pi e^2}{m}\frac{\psi}{q}. \tag{5}$$

from (1) where r is the running coordinate of the volume element, $\Omega^2 = 4\pi n_0 e^2/m(k+1)$, q = 1, 1π, 4π, $\psi = \psi_* + q\int_{r_*} n(r_1)r_1^k dr_1$, where ψ_* and r are arbitrary constants. The solutions of this differential equation are correct if the trajectories of the electron volume elements determined by them do not intersect each other. An intersection of the trajectories would lead to the formation of shock waves. Several examples with non-intersecting trajectories are studied. For a cold plasma (p = 0) Abel's second-order equation

Card 2/6

Nonlinear Langmuir oscillations

$$v\frac{\partial v}{\partial r}+\nu v+\Omega^2 r=\frac{C(r_0)}{r^k}. \qquad (6)$$

is obtained from (5) with the aid of the independent variables r and r_0. For k = 0 it is found that the oscillation period is independent of the amplitude, the ion density and the frictional force:

$$r=\frac{C(r_0)}{\Omega^2}+Re^{-\frac{\nu t}{2}}\cos(\omega t+\delta),\quad \omega\equiv\sqrt{\Omega^2-\frac{\nu^2}{4}}, \qquad (7)$$

$$\left.\begin{aligned} v&=-\Omega Re^{-\frac{\nu t}{2}}\sin(\omega t+\delta+\delta_0),\quad \sin\delta_0=\frac{\nu}{2\Omega},\\ E&=\frac{m\Omega^2}{e}Re^{-\frac{\nu t}{2}}\cos(\omega t+\delta),\\ n&=n(r_0)\left\{\frac{n(r_0)}{n_0}+e^{-\frac{\nu t}{2}}[R'\cos(\omega t+\delta)-R\delta'\sin(\omega t+\delta)]\right\}^{-1}, \end{aligned}\right\} \qquad (8)$$

$n(r_0)$ is the electron density distribution at t = 0. The relations

Card 3/6

Nonlinear Langmuir oscillations

between R, Ω, velocity and density distributions at the time t = 0 are

$$\left.\begin{aligned} v(r_0) &= -\Omega R \sin(\delta + \delta_0), \\ n(r_0) &= n_0\left[1 - \frac{d}{dr_0}(R\cos\delta)\right]. \end{aligned}\right\} \qquad (9).$$

A sufficient condition for the non-intersection of the volume trajectories is $|dv(r_0)/\Omega\, dr_0| < 1$, i. e., the distribution of $v(r_0)$ must be sufficiently homogeneous. For $\nu = 0$ (no friction) and on the condition that the motion of the electron gas is adiabatic ($p = \sigma(r_0)n^{\gamma}$)

$$T = 2\int_{\mu\,\min}^{\mu_{\max}} \frac{d\mu}{\sqrt{2\delta_0 - \Omega^2\mu^2 + \frac{2n_0\Omega^2}{n_0}\int\frac{d\mu}{\mu^k} - 2a_0\int\frac{d\mu}{\mu^{(\gamma-1)(k+1)-1}}}}. \qquad (18)$$

is derived for the period of the motion. For k = 0 the pressure is approximated according to S. A. Chaplygin (Izbrannyye trudy po mekhanike

Card 4/6

Nonlinear Langmuir oscillations

i matematike. GITTL, M., 1954) with $p = p_0 - p_* n_0/n$, where p_0 and p_* are constants. Thus the equation of motion (5) can be written as

$$\frac{d^2r}{dt^2} + \nu\frac{dr}{dt} + \Omega^2 r - c_*^2\frac{\partial^2 r}{\partial \xi^2} = \Omega^2\xi. \qquad (21).$$

By separating the variables, particular solutions are obtained from which conditions for the non-intersection of the trajectories are derived. The larger the oscillation amplitudes, the smaller the inhomogeneity in the distribution of the physical quantities must be at the beginning in order that the various electron volume elements do not intersect during their motion. The authors thank A. G. Sitenko for his interest. There are 21 references: 18 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: J. M. Dawson, Phys. Rev., 113, no. 2, 383, 1959; E. A. Jackson, Phys. of Fluids, 3, no. 5, 831, 1960.

Card 5/6

34204
S/057/62/032/002/004/022
B104/B102

Nonlinear Langmuir oscillations

SUBMITTED: March 4, 1961

Card 6/6

SALTANOV, N.V.; TKALICH, V.S. (Sukhumi)

"On the unsteady problem of magnetogasdynamics; an analogue of L.I. Sedov's hodograph method; Riemann waves"

Report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow 29 Jan - 5 Feb 64.

L 22536-65 EWT(1)/EWP(m)/EPA(sp)-2/EWG(v)/EWA(d)/EPR/EPA(w)-2/T-2/EWA(m)-2
Pd-1/Pe-5/Pi-4/Ps-4/Pab-10 IJP(c)

ACCESSION NR: AP4038519 S/0020/64/156/003/0529/0532

AUTHOR: Saltanov, N. V.; Tkalich, V. S.

TITLE: On a nonstationary gas magnetohydrodynamics problem. An analogon of a Riemann wave

SOURCE: AN SSSR. Doklady*, v. 156, no. 3, 1964, 529-532

TOPIC TAGS: nonstationary gas magnetodynamics, relativistic gas magneto-hydrodynamics, Riemann wave, Sedov equation

ABSTRACT: The authors consider the nonstationary problem of gas dynamic and of the gas magneto-hydrodynamics in two cyclic coordinates. The initial equations are transformed by means of the symmetry integrals into a system of two scalar equations, for the determination of the total pressure and the first velocity component. Transformation to the ρ, ψ, θ -variables results in an equation which is identical with the Sedov's equation (L. I. Sedov, Problems of Hydrodynamics and Aerodynamics in a Plane, M-L, 1950). By using methods developed for the

Card 1/2

L 22536-65

ACCESSION NR: AP4038519

analysis of stationary gas-dynamical problems, results are obtained for the nonstationary case. Riemann waves in a quasibarotropic medium were also studied. The method is also applicable to the analysis of nonrelativistic cases of the gas magneto-hydrodynamics. Orig. art. has: 15 equations

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko (Kiyev State University)

SUBMITTED: 27May63 ENCL: 00 SUB CODE: ME

NR REF SOV: 015 OTHER: 000

Card 2/2

L 15656-66 EWT(1)/EWP(m)/T-2 IJP(c)
ACC NR: AP6003200 SOURCE CODE: UR/0382/65/000/004/0035/0040

AUTHOR: Saltanov, N. V.; Tkalich, V. S.

45
03

ORG: none

TITLE: A nonstationary, one-dimensional problem in magnetogasdynamics. Riemann waves

SOURCE: Magnitnaya gidrodinamika, no. 4, 1965, 35-40

TOPIC TAGS: magnetogasdynamics, Riemann wave, relativistic plasma

ABSTRACT: Introducing appropriate transformations, the relativistic equations of motion and continuity and equation of induction are rewritten to coincide with Sedov's equations in Rudnev's form, with accuracy up to the symbols. This permits use of known stationary solutions in the analysis of nonstationary problems and vice versa. Conditions for linearizing the problem are also indicated. In the process of linearizing the problem, the Riemann waves are obtained. By imposing further restrictions on the physical variables the problem is reduced to a nonrelativistic case which emphasizes the two extreme cases of very long and very short wave. Orig. art. has: 25 formulas.

SUB CODE: 20/ SUBM DATE: 25Dec64/ ORIG REF: 008/ OTH REF: 000

Card 1/1 UDC: 533.95 : 538.3

SALTANOV, S.E., inzhener

Electrification of the peat transportation system. Torf.prom. 32 no.5:10-11 '55. (MLRA 8:10)

1. Gosudarstvennyy Institut po proyektirovaniyu zavodov torfyanoy promyshlennosti
(Peat--Transportation) (Electric railroads)

SALTANOV, V.

Supply agriculture with technically based work norms. Sots.trud 7 no.7:97-99 Jl '62. (MIRA 15:8)
(Agriculture--Production standards)

SALTANOV, V., agronom

Without a seasonal labor force. Sots.trud 8 no.3:106-109 Mr '63.
(MIRA 16:3)
(State farms--Management) (Yesil' District--Farm mechanization)

SALTANOV, V.; FILIPPOV, A.

Practice in establishing work norms on the "Maiskii" State Farm. Biul. nauch. inform.: trud i zar. plata 5 no.9:19-21 '62. (MIRA 15:10)

(Kaliningrad District (Moscow Province)—State farms—Production standards)